Abstract of thesis entitled:

A Study of Factors Underlying the Performance of Rapid Automatized Naming (RAN) of Chinese Dyslexic Children

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Abstract

Despite the wide practical use of rapid automatized naming (RAN) tasks for identifying dyslexic children, the origin of the RAN deficit in dyslexia remains unclear, probably due to the multicomponential nature of the task (Wolf & Bowers, 1999). Possible deficit in stimulus evaluation efficiency in Chinese dyslexic children (n =12) and CA control children (n=13) was investigated using the P3 ERP component in three versions of an oddball task (objects, letters and digits) using RAN stimuli. Behavioural RAN tasks were also admitted to evaluate whether Chinese dyslexic children performed differentially on each task. Though P3 latencies analysis did not suggest differences in visual processing speed between the two groups of readers, RAN performances showed that only digit RAN discriminated dyslexic and control children, and dyslexic children showed more varied reaction times during the digit oddball task. The results are discussed in relation to automaticity of digit rapid naming processes and task demands.

摘要

雖然快速自動化命名任務已經廣泛利用來辨出患有發展性讀寫障礙 (developmental dyslexia) 的小孩，但是因爲快速命名是一個包含多個認知階段的歷程，所以快速命名缺陷的成因尚未清楚。在中文讀寫障礙的個案中，我們設想這個缺陷和刺激評價效率 (stimulus evaluation efficiency) 有關，並透過分析分別由三個版本的OB刺激序列 (oddball paradigm，物件、英文字母和阿拉伯數字) 誘發的P300事件相關電位來驗證此設想的可能性。在這三個OB刺激序列中使用的視覺刺激均與快速自動化命名任務中採用的相同。受試者是十二位患有中文讀寫障礙的小孩及十三位實足年齡對照小孩。除了事件相關電位，我們也分析了各小孩在不同的快速自動化命名任務的的行爲表現。P300事件相關電位的潛伏期 (latency) 的分析結果顯示，兩組小孩在視覺加工速度並沒有分別；然而，快速自動化命名任務的行爲表現分析顯示只有阿拉伯數字版本的快速自動化命名任務能有效分辨出患有讀寫障礙的小孩和對照組的小孩。除此之外，患有讀寫障礙的小孩在阿拉伯數字版本的OB刺激序列所做出的反應時間的變異也比較大。我們嘗試利用數字的閱讀自動化和任務需求來解釋實驗結果。